

Section I. (Amendments to the Claims)

Please amend claim 18 and add new claims 32-66 as set out in the following list of claims 1-66 now pending in the application.

1. (Previously presented): A liquid handling system comprising:
a container having an interior for holding a liquid;
a storage means coupled to a portion of said container and for storing information relating to the liquid; and
a connector for physically coupling to the portion and having a communication means for obtaining information from the storage means, said connector to allow access to the liquid for processing thereof based on the information.
2. (Previously presented): The liquid handling system of claim 1, further comprising a controller means coupled to said connector for directing of the processing, said controller means including a user-interface capable of receiving input from a user.
3. (Original): The liquid handling system of claim 2, wherein the controller means further controls processing the liquid based on input received by the user-interface from the user.
4. (Previously presented): The liquid handling system of claim 3, wherein the controller means further controls processing the liquid by comparing the input received by the user-interface from the user to information read from the storage means.
5. (Original): The liquid handling system of claim 2, wherein the user-interface comprises a touch screen capable of receiving input from the user and displaying information about the liquid contained in the container.

6. (Previously presented): The liquid handling system of claim 1 wherein the portion includes a cap for controlling sealing of the liquid in said container, said connector for coupling with the cap for dispensing the liquid from the container through the connector.
7. (Original): The liquid handling system of claim 6, wherein the storage means is mounted on the cap and the communication means is mounted on the connector.
8. (Original): The liquid handling system of claim 6, wherein the storage means is mounted on the connector and the communication means is mounted on the cap.
9. (Original): The liquid handling system of claim 1, wherein the communication means is a radio frequency (RF) antenna and the storage means is a passive radio frequency identification (RFID) tag.
10. (Original): The liquid handling system of claim 9, wherein the RFID tag comprises a passive RF transponder and an electrically erasable programmable read-only memory (EEPROM).
11. (Previously presented): A liquid handling system comprising:
- a container having an opening for holding a liquid;
 - a cap having a radio frequency identification (RFID) tag mounted thereon and for coupling with the opening for sealing the liquid in the container;
 - a connector having a radio frequency (RF) antenna mounted thereon for reading information from the RFID tag and for physically coupling with the cap for dispensing the liquid from the container through the connector; and

a controller coupled with the RF antenna for processing the liquid based on the information.

12. (Previously presented): The liquid handling system of claim 11, the connector further comprising:

a connector head; and

a probe extending from the connector head and insertable through a center of the cap and into the opening, the probe having a flow passage therein for coupling said connector to said cap.

13. (Original): The liquid handling system of claim 12, wherein a pump is coupled with the probe and with the flow passage for pumping liquid through the probe and the flow passage.

14. (Original): The liquid handling system of claim 11, wherein the RFID tag comprises a passive RF transponder and an electrically erasable programmable read-only memory (EEPROM).

15. (Original): The liquid handling system of claim 14, wherein the EEPROM stores information about the liquid contained in the container.

16. (Previously presented): A method of handling liquids comprising:

providing a container for holding a liquid;

coupling a storage device to a portion of the container;

storing information about the liquid on the storage device;

reading the information from the storage device; and

controlling processing of the liquid with a controller based on the information, said reading to occur during said controlling, said reading and said controlling to occur through a single connector physically coupled to the portion of the container.

17. (Cancelled).

18. (Currently amended): The method of claim 16, wherein the ~~electronic~~ storage device is a RFID tag comprising a passive RF transponder and an electrically erasable programmable read-only memory (EEPROM).

19. (Original): The method of claim 18, wherein the EEPROM stores information relating to the liquid contained in the container.

20. (Previously presented): A material identification system comprising:
identification means coupled to a portion of a container for storing information relating to a material at an interior of the container;
communication means for reading the information from the identification means; and
controller means coupled to the communication means at a connector for physically coupling to the container at the portion for regulating processing of the material based on the information.

21. (Previously presented): The material identification system of claim 20, wherein the controller means includes a user-interface capable of receiving input from a user.

22. (Previously presented): The material identification system of claim 21, wherein the controller means further regulates processing of the material based on input received by the user-interface from the user.

23. (Previously presented): The material identification system of claim 22, wherein the controller means further regulates processing the material by comparing the input received by the user-interface from the user to information read from the identification means to determine whether the material should be processed.

24. (Previously presented): The material identification system of claim 21, wherein the user-interface comprises a touch screen capable of receiving input from the user and displaying information about the material.

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Previously presented): The liquid handling system of claim 1 wherein said communication means is further for directing information to the storage means.

31. (Previously presented): The liquid handling system of claim 11, wherein said radio frequency (RF) antenna is further for directing information to the RFID tag.

32. (New): A storage and dispensing system for storage and dispensing of liquid, comprising:

a portable container arranged for holding liquid and including a container opening;

a cap securable to the container opening and including a radio frequency identification tag in the cap, the cap (i) being arranged when secured to the container opening to seal the container for containment of liquid therein, (ii) including a rupturable membrane therein, and (iii) being engageable with a connector including a connector head and probe extending therefrom, wherein the probe is insertable through the rupturable membrane into the container, and wherein the probe has a liquid flow passage therethrough;

a connector including a connector head and a probe extending therefrom, wherein the probe has a liquid flow passage therethrough, and the connector is arranged for flow of liquid from the container through the probe to a location exterior of the container when pumping action is applied to the connector;

the connector head including an antenna arranged to communicate (i) with the radio frequency identification tag in the cap when the connector head is engaged with the cap, and (ii) with a controller arranged to control the pumping action in accordance with information contained in said radio frequency identification tag in said cap, and communicated by the antenna to the controller.

33. (New): The storage and dispensing system of claim 32, wherein the cap when engaged with the connector head places the antenna in contact with the radio frequency identification tag.

34. (New): The storage and dispensing system of claim 32, wherein the cap includes a central probe hole having the rupturable membrane associated therewith, so that the probe can be inserted through the probe hole and rupture the rupturable membrane when the cap is engaged with the connector.

35. (New): The storage and dispensing system of claim 32, wherein the antenna and the radio frequency identification tag in the cap are separated by a distance of less than 10 millimeters, when the connector is engaged with the cap.

36. (New): The storage and dispensing system of claim 32, further comprising liquid in said container.

37. (New): The storage and dispensing system of claim 36, wherein said liquid comprises a liquid material selected from the group consisting of acids, solvents, bases, photoresists, dopants, inorganic solutions, organic solutions, biological solutions, pharmaceuticals and radioactive chemicals.

38. (New): The storage and dispensing system of claim 36, wherein the liquid comprises photoresist material.

39. (New): The storage and dispensing system of claim 32, wherein the antenna comprises a radio frequency antenna.

40. (New): The storage and dispensing system of claim 32, wherein the cap is threadably connected to the container opening.

41. (New): The storage and dispensing system of claim 32, wherein the cap is snapably secured to the container opening.

42. (New): The storage and dispensing system of claim 32, wherein the cap is vacuum sealed onto the container opening.

43. (New): The storage and dispensing system of claim 32, further comprising a controller arranged to control the pumping action in accordance with information contained in the radio frequency identification tag in the cap, and communicated by the antenna to the controller.

44. (New): The storage and dispensing system of claim 43, wherein the controller includes a read/write device.

45. (New): The storage and dispensing system of claim 44, wherein the read/write device includes a second antenna.

46. (New): The storage and dispensing system of claim 45, wherein the second antenna comprises a modular antenna line interconnecting the read/write device and the antenna of the connector head.

47. (New): The storage and dispensing system of claim 45, wherein the second antenna comprises a radio frequency antenna.

48. (New): The storage and dispensing system of claim 47, wherein the radio frequency second antenna of the read/write device is separated from the connector head antenna by a distance of less than 5 meters.

49. (New): The storage and dispensing system of claim 43, wherein the controller comprises a user interface including a touch screen for operator input to said controller.

50. (New): The storage and dispensing system of claim 49, wherein the touch screen is arranged for operator input of information including at least one information input selected from the group consisting of:

- installation time of the container;
- shelf life of liquid in the container;
- process utilization of the liquid in the container;
- when the liquid in the container is used; and
- how much of the liquid in the container is used.

51. (New): The storage and dispensing system of claim 43, wherein the controller is arranged to generate a visual output indicative of matching of liquid in the container to a liquid requirement of a liquid-using process.

52. (New): The storage and dispensing system of claim 51, wherein the controller is arranged to generate a visual output indicative of a mismatch of liquid in the container to a liquid requirement of a liquid-using process.

53. (New): The storage and dispensing system of claim 43, wherein the controller is arranged to generate (i) a first visual output indicative of matching of liquid in the container to a liquid requirement of a liquid-using process, and (ii) a second visual output indicative of a mismatch of liquid in the container to a liquid requirement of a liquid-using process, wherein the matching or mismatch are indicated by differently colored first and second visual outputs.

54. (New): The storage and dispensing system of claim 53, wherein the first visual output includes a green colored output display and the second visual output includes a red colored output display.

55. (New): The storage and dispensing system of claim 43, further comprising a pump operatively coupled to the controller to apply said pumping action to the connector, wherein the controller is arranged to modulate said pumping action of the pump in response to information inputted to the controller including at least one information input selected from the group consisting of (i) information contained in the radio frequency identification tag in the cap of the container; (ii) information inputted by an operator to the controller; and (iii) information inputted to the controller from a liquid-using process to which liquid from the container can be dispensed.

56. (New): The storage and dispensing system of claim 32, wherein the system further comprises a pump operatively coupled to the probe for pumping liquid from the container through the flow passage of the probe and out of the container.

57. (New): A storage and dispensing system for storage and dispensing of liquid, comprising:

a portable container arranged for holding liquid and including a container opening;

a cap securable to said opening and including a radio frequency identification tag in the cap, the cap being arranged when secured to the opening to seal the container for containment of liquid therein, and the cap being engageable with a connector including a connector head and probe extending therefrom, wherein the probe is insertable through the cap into the container, and wherein the probe has a liquid flow passage therethrough;

a connector including a connector head and a probe extending therefrom, wherein the probe has a flow passage therethrough, and the connector is arranged for flow of liquid from the container through the probe to a location exterior of the container when pumping action is applied to the connector;

the connector head including a radio frequency antenna arranged to communicate (i) with the radio frequency identification tag in the cap when the connector is engaged with the cap, and (ii) with a controller arranged to control the pumping action in accordance with information contained in said radio frequency identification tag in said cap, and communicated by the first radio frequency antenna to the controller;

wherein the antenna and the radio frequency identification tag in the cap are separated by a distance of less than 10 millimeters, when the connector is engaged with the cap;

a photoresist liquid in the container;

a controller arranged to control the pumping action in accordance with information contained in the radio frequency identification tag in said cap, and communicated by the first radio frequency antenna to the controller;

a pump operatively coupled to the controller to apply the pumping action to the connector, and operatively coupled to the probe for pumping liquid from the container through the flow passage of the probe and out of the container to a liquid-using process during liquid dispensing operation.

58. (New): A storage and dispensing system for storage and dispensing of liquid, comprising:

a portable container arranged for holding liquid and including a container opening;

a cap securable to said opening and including an electronic information storage component in the cap, said cap being arranged when secured to said opening to seal the container for containment of liquid therein, and said cap being engageable with a connector including a

connector head and probe extending therefrom, wherein the probe is insertable through said cap into the container, and wherein the probe has a liquid flow passage therethrough;

a connector including a connector head and a probe extending therefrom, wherein the probe has a flow passage therethrough, and the connector is arranged for flow of liquid from the container through the probe to a location exterior of the container when pumping action is applied to the connector;

said connector head including an antenna arranged to communicate (i) with the radio frequency identification tag in the cap when the connector is engaged with the cap, and (ii) with a controller arranged to control said pumping action in accordance with information contained in said radio frequency identification tag in said cap, and communicated by said antenna to the controller; and

a liquid for manufacturing integrated circuits in the container.

59. (New): The storage and dispensing system of claim 58, wherein the electronic information storage component comprises an electronic storage element selected from the group consisting of EEPROMs, EPROMs, PROMs and RAMs.

60. (New): A liquid handling system with electronic information storage, comprising a multiplicity of liquid storage and dispensing systems as claimed in claim 1, wherein at least some of said containers contain different liquids than other containers, and wherein the multiplicity of liquid storage and dispensing systems are operatively linked to a unitary user interface by their connectors.

61. (New): The liquid handling system of claim 60, wherein containers of said multiplicity of liquid storage and dispensing systems are situated in a plurality of drawers, with each drawer containing a plurality of positions, and each position configured to hold a single container, and

wherein the unitary user interface includes a display screen arranged to graphically display each of the containers in its corresponding drawer and position within the drawer.

62. (New): The liquid handling system of claim 61, wherein the display screen is arranged to graphically display each of said containers (i) in a first color when the container is correctly matched to a connector, and (ii) in a second color when the container is incorrectly matched to a connector.

63. (New): The liquid handling system of claim 62, wherein said first color is green, and said second color is red.

64. (New): The liquid handling system of claim 63, wherein the containers in said drawers contain liquids for manufacturing integrated circuits.

65. (New): The liquid handling system of claim 1, wherein said container is portable in character, and contains a photoresist material.

66. (New) A liquid storage and dispensing system, comprising:
a cylindrical vessel having a top opening;
a cap matably engaged with the top opening of the vessel, the cap including an RFID tag on a peripheral portion of the cap, and a central opening in the cap through which a liquid dispensing tube of a connector head may be inserted to place the liquid dispensing tube in contact with liquid in the vessel;
a rupturable membrane closing the opening in the cap, the rupturable membrane being rupturable when the liquid dispensing tube is inserted through the opening to place the liquid dispensing tube in contact with liquid in the vessel;

an integrated circuit manufacturing liquid in the vessel;

a connector including a liquid dispensing tube and a connector main body to which the liquid dispensing tube is connected, the connector main body having an antenna therein which is placed into information transmission relationship with the RFID tag when the liquid dispensing tube is inserted through the rupturable membrane and the connector main body is engaged with the cap, whereby information from the RFID tag can be transmitted by the antenna to a signal processor by a wire or wireless connection.